as enclosed to IPER

We claim:

1. A process for oligomerizing C_6-olefins by reaction of a C_6-olefin-containing reaction mixture over a nickel-containing fixed-bed catalyst, comprising from 10 to 70% by weight of nickel oxide, from 5 to 30% by weight of titanium dioxide and/or zirconium dioxide and from 0 to 20% by weight of aluminum oxide as significant active constituents and silicon dioxide as the remainder, wherein the reaction over the fixed-bed catalyst is run at a conversion to oligomerized C_6-olefins of not more than 30% by weight, based on the reaction mixture.

2. A process as claimed in claim 1, wherein the reaction over the fixed-bed catalyst is run at a conversion to oligomerized C_6-olefins of from 10 to 30% by weight, based on the reaction mixture.

3. A process as claimed in claim 1 or 2, wherein the oligomerization is essentially a dimerization.

4. A process as claimed in any of claims 1 to 3 carried out at from 30 to 300°C and a pressure in the range from 10 to 300 bar.

5. A process as claimed in any of claims 1 to 4 carried out continuously in the liquid phase.

6. A process as claimed in claim 5 which is carried out adiabatically in a shaft oven and in which part of the reacted mixture is returned to the reaction.

7. A process as claimed in any of claims 1 to 6, wherein the feed mixture is fractionated in a column to separate C_6-olefins and oligomers prior to the reaction, the C_6-olefins are returned to the reaction, the reacted mixture is returned to the column and the oligomers (C_{7+}-hydrocarbons) are discharged.

8. A process as claimed in any of claims 1 to 6, wherein the reacted mixture after the reaction is fractionated in a column to separate C_6-olefins and oligomers, the C_6-olefins are returned to the reaction and the oligomers are discharged.

9. A process as claimed in any of claims 1 to 8, wherein the reaction is passed over a protective bed prior to the reaction.